

TC3700

CP2

Bldg./Room

Organization

U. S. DEPARTMENT OF COMMERCE

COMMISSIONER FOR PATENTS

P.O. BOX 1450

ALEXANDRIA, VA 22313-1450

IF UNDELIVERABLE RETURN IN TEN DAYS

OFFICIAL BUSINESS

AN EQUAL OPPORTUNITY EMPLOYER



**Office Action Summary**

Application N .

09/689,774

Applicant(s)

KATSUBE ET AL.

Examiner

Eric B. Compton

Art Unit

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 7 and 9-14 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7 and 9-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 17.                      6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 23, 2003, has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7 and 9-15 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the bonding portion" in line 8. There is insufficient antecedent basis for this limitation in the claim. Perhaps this limitation should read --a bonding portion--.

Claims 9-15 depend from claim 7 and therefore are also indefinite.

Art Unit: 3726

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 07-022795 to Kazuhiko et al (SHIN ESTU CHEM CO) in view of JP 11-045912 to MATSUSHITA.

Kazuhiko et al disclose a method for manufacturing electronic components, comprising: holding a substrate (3) on a surface of a holding jig (1,2) made of an elastic material (1), in which at least the surface of the elastic material is adhesive, by the strength of the surface; and mounting and electrically connecting an element (see section [0020] of the machine translation)) on the substrate while surface is held on the surface of the elastic material.

However, they do not specifically disclose how the electronic components are mounted on the substrate.

MATSUSHITA discloses a method an apparatus for bonding electronic components to substrate. The electronic components are bump bonded to the substrate using ultrasonic waves. The process allows the component to be conductively bonding very firmly (Derwent English Abstract).

Regarding claim 7, it would have been obvious to one of ordinary skill in the art to manufacture the electronic component of Kazuhiko et al by a bump bonding process

Art Unit: 3726

using ultrasonic waves, in light of the teachings of MATSUSHITA, in order to manufacture electronic components using conventional bonding apparatus known in the art to firmly bond the component to the substrate.

6. Claims 9, 10-12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhiko et al/MATSUSHITA in view of US patent 4,098,945 to Oehmke.

Kazuhiko et al/ MATSUSHITA disclose the invention cited above. Kazuhiko et al do note that the rubber layer may be of the hardening type. English Translation, [0008]. However, they do not explicitly disclose that the elastic material has a hardness of at least A30.

Oehmke discloses a conductive adhesive elastic material comprising an elastic binder for "peelable adhesive fastening of metallic materials without interruption of the electrical conductive pathways between them" (col. 7, lines 62-64). It is disclosed that the conductive material may preferably comprise silicone rubber (see col. 6, lines 38-43). Furthermore, it is noted that the "binder should be capable of providing a soft composition having a Shore A hardness of less than about 40" (col 6., lines 34-36). It is also pointed out that a Shore A hardness of greater than 40 is too hard for most applications (cols. 1-2, lines 66-1).

Regarding claim 9, it would have been obvious to one having ordinary skill in the art at the time of invention, to have provided the elastic of Kazuhiko/ MATSUSHITA with a rubber having a hardness of at least A30, in light of the teachings of Oehmke, in order

Art Unit: 3726

to provide an adhesive having a requisite conformability, moldability, and flexibility (col 2, lines 21+).

Regarding claim 10, Applicant, Kazuhiko, and Oehmke all disclose a silicone rubber composition. Applicant notes these composition are stable at 250 °C. Kazuhiko et al do note that the rubber layer has a thermal resistance. English Translation, [0026]. Therefore, it is inherent that this composition is stable at this temperature also. "Products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claim 11, in Kazuhiko the step of holding is carried out using a jig having a laminate structure comprising: a hard material (2) and the elastic material (1).

Regarding claim 12, in Kazuhiko and Oehmke the elastic material is an adhesive silicone rubber layer.

Regarding claim 14, MATSUSHITA discloses bump bonding the component to a substrate.

7. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhiko et al/ MATSUSITA/Oehmke in view of Applicant's Admitted Prior Art (AAPA).

Kazuhiko et al/MATSUSITA/Oehmke disclose the invention cited above. However, they do not specifically disclose how the electronic components are mounted on the substrate.

Art Unit: 3726

AAPA notes as on prior art on page 1, lines 22+, of the specification that wire bonding is a known bonding technique using an automated process.

Regarding claim 13, it would have been obvious to one of ordinary skill in the art to manufacture the electronic component of Kazuhiko et al/MATSUSITA/Oehmke by a wire bonding process, in light of the teachings of AAPA, in order to manufacture electronic components using conventional bonding apparatus known in the art.

### ***Response to Arguments***

Applicant's arguments filed December 1, 2003, have been fully considered but they are not persuasive.

Applicant arguments had previously been addressed in the Final Office Action dated August 29, 2003 (Paper No. 13). With respect to JP 07-022795 (Kazuhiko et al), Applicant argues that this reference does not show, teach, or suggest "mounting an electrically connecting an element on a substrate while the substrate is held on a surface of an elastic material." Response, page 6. It is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim 7, emphasis added, recites

A method of manufacturing electronic parts, comprising:  
holding a substrate on a surface of a holding jig made of an elastic material, in which at least the surface of said elastic material is adhesive, by the adhesive strength of the surface;

Art Unit: 3726

***mounting and electrically connecting an element on said substrate*** while the substrate is held on the surface of the elastic material; and applying ultrasonic waves to the bonding portion at which the electric connection is performed.

As suggested by [0020] of the reference, electronic parts (no ref) are electrically connected to the FPC substrate (3), via copper circuit patterns and solder (pewter reflow), while it is held on the surface of a holding jig (1, 2) made of an elastic material (1) by the adhesive strength of the elastic material. Despite Applicant's arguments to the contrary, the language of claim 7 does not explicitly require the substrate to be electrically connected to the elastic material, but only that an element is electrically connected to the substrate while the substrate is held on the surface of the elastic material. Thus, Kazuhiko et al clearly teach the first and second claim limitations above.

Applicant further argues, "Nothing is Kazuhiko et al. shows, teaches, or suggests applying ultrasonic waves to a bonding portion at which an electrical connection is performed as claimed in claim 7." Response, page 6. In the Final Office Action dated August 29, 2003 (Paper No. 13), the Examiner rejected claim 8, as being unpatentable over Kazuhiko et al in view of JP 11-045912 to MATSUSHITA. By this amendment Applicant incorporate claim 8 (canceled) into claim 7. MATSUSHITA discloses applying ultrasonic waves to a bonding portion in order firmly bond the component to the substrate. Thus, the Examiner has presented a prima face case of obviousness for modifying Kazuhiko et al. Applicant did not rebut MATSUSHITA with regard to this limitation in the response.

With respect to U.S. Pat 4,098,945 (Oehmke), Applicant previously argued that this reference does not teach or suggest "the [conductive elastic] material can hold a



Art Unit: 3726

substrate on its surface by the adhesive strength of its surface.” Response dated July 16, 2003 (Paper No. 12), page 11. However, Oehmke discloses “the binder system is itself pressure-sensitive so that the entire conductive composition will **immediately adhere to conductive surfaces** upon impact.” Col. 6, lines 44-46 (emphasis added). Likewise, the reference refers to the layers as an adhesive. *Id.* at lines 44-64. It is inherent that an adhesive has a certain degree of adhesive strength, for which the reference refers to as 180 ° (adhesion) peel strength and provided empirical data. *Id.* at Table II. Lastly, Oehmke discloses that “[these] compositions are useful for a wide variety of application which include peelable adhesive fastening of metallic material without interruptions of the electrical conductive pathway between them ...” for example for use as a ground or to fasten metal objects together. *Id.* at Cols. 7-8, lines 60-2. Therefore, Oehmke conductive adhesive would be sufficient to adhesively attach electronic components to a substrate. The Examiner previously made a prima facie case above for combining these teachings with those of Kazuhiko et al. In addition, Applicant argues that there is no suggestion of “mounting and electrically connecting an element on the substrate while the substrate is held on the surface of the elastic material.” Paper No. 12, page 12. This, limitation was previously discussed with respect to Kazuhiko et al, *supra*.

Applicant’s arguments with regards to the other rejections are believed to be moot in light of the clarification above.

Art Unit: 3726

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Compton whose telephone number is (703) 305-0240. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter B. Vo can be reached on (703) 308-1789. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9302.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.



Eric Compton  
Patent Examiner  
AU 3726

**NOTICE OF OFFICE PLAN TO CEASE SUPPLYING COPIES OF CITED U.S. PATENT  
REFERENCES WITH OFFICE ACTIONS, AND PILOT TO EVALUATE THE  
ALTERNATIVE OF PROVIDING ELECTRONIC ACCESS TO SUCH U.S. PATENT  
REFERENCES**

**Summary**

The United States Patent and Trademark Office (Office or USPTO) plans in the near future to: (1) cease mailing copies of U.S. patents and U.S. patent application publications (US patent references) with Office actions except for citations made during the international stage of an international application under the Patent Cooperation Treaty and those made during reexamination proceedings; and (2) provide electronic access to, with convenient downloading capability of, the US patent references cited in an Office action via the Office's private Patent Application Information Retrieval (PAIR) system which has a new feature called "E-Patent Reference." Before ceasing to provide copies of U.S. patent references with Office actions, the Office shall test the feasibility of the E-Patent Reference feature by conducting a two-month pilot project starting with Office actions mailed after December 1, 2003. The Office shall evaluate the pilot project and publish the results in a notice which will be posted on the Office's web site ([www.USPTO.gov](http://www.USPTO.gov)) and in the Patent Official Gazette (O.G.). In order to use the new E-Patent Reference feature during the pilot period, or when the Office ceases to send copies of U.S. patent references with Office actions, the applicant must: (1) obtain a digital certificate from the Office; (2) obtain a customer number from the Office, and (3) properly associate applications with the customer number. The pilot project does not involve or affect the current Office practice of supplying paper copies of foreign patent documents and non-patent literature with Office actions. Paper copies of references will continue to be provided by the USPTO for searches and written opinions prepared by the USPTO for international applications during the international stage and for reexamination proceedings.

**Description of Pilot Project to Provide Electronic Access to Cited U.S. Patent References**

On December 1, 2003, the Office will make available a new feature, E-Patent Reference, in the Office's private PAIR system, to allow more convenient downloading of U.S. patents and U.S. patent application publications. The new feature will allow an authorized user of private PAIR to download some or all of the U.S. patents and U.S. patent application publications cited by an examiner on form PTO-892 in Office actions, as well as U.S. patents and U.S. patent application publications submitted by applicants on form PTO/SB08 (1449) as part of an IDS. The retrieval of some or all of the documents may be performed in one downloading step with the documents encoded as Adobe Portable Document format (.pdf) files, which is an improvement over the current page-by-page retrieval capability from other USPTO systems.

## **Steps to Use the New E-Patent Reference Feature During the Pilot Project and Thereafter**

Access to private PAIR is required to utilize E-Patent Reference. If you don't already have access to private PAIR, the Office urges practitioners, and applicants not represented by a practitioner, to take advantage of the transition period to obtain a no-cost USPTO Public Key Infrastructure (PKI) digital certificate, obtain a USPTO customer number, associate all of their pending and new application filings with their customer number, install no-cost software (supplied by the Office) required to access private PAIR and E-Patent Reference feature, and make appropriate arrangements for Internet access. The full instructions for obtaining a PKI digital certificate are available at the Office's Electronic Business Center (EBC) web page at: <http://www.uspto.gov/ebc/downloads.html>. Note that a notarized signature will be required to obtain a digital certificate.

To get a Customer Number, download and complete the Customer Number Request form, PTO-SB125, at: <http://www.uspto.gov/web/forms/sb0125.pdf>. The completed form can then be transmitted by facsimile to the Electronic Business Center at (703) 308-2840, or mailed to the address on the form. If you are a registered attorney or patent agent, then your registration number must be associated with your customer number. This is accomplished by adding your registration number to the Customer Number Request form. A description of associating a customer number with an application is described at the EBC web page at: [http://www.uspto.gov/ebc/registration\\_pair.html](http://www.uspto.gov/ebc/registration_pair.html).

The E-Patent Reference feature will be accessed using a new button on the private PAIR screen. Ordinarily all of the cited U.S. patent and U.S. patent application publication references will be available over the Internet using the Office's new E-Patent Reference feature. The size of the references to be downloaded will be displayed by E-Patent Reference so the download time can be estimated. Applicants and registered practitioners can select to download all of the references or any combination of cited references. Selected references will be downloaded as complete documents as Adobe Portable Document Format (.pdf) files. For a limited period of time, the USPTO will include a copy of this notice with Office actions to encourage applicants to use this new feature and, if needed, to take the steps outlined above in order to be able to utilize this new feature during the pilot and thereafter.

During the two-month pilot, the Office will evaluate the stability and capacity of the E-Patent Reference feature to reliably provide electronic access to cited U.S. patent and U.S. patent application publication references. While copies of U.S. patent and U.S. patent application publication references cited by examiners will continue to be mailed with Office actions during the pilot project, applicants are encouraged to use the private PAIR and the E-Patent Reference feature to electronically access and download cited U.S. patent and U.S. patent application publication references so the Office will be able to objectively evaluate its performance. The public is encouraged to submit comments to the Office on the usability and performance of the E-Patent Reference feature during the pilot. Further, during the pilot period registered practitioners, and applicants not represented by a practitioner, are encouraged to experiment with the feature, develop a proficiency in using the feature, and establish new internal processes for using the new access to the cited U.S. patents and U.S. patent application publications to prepare

references. The Office plans to continue to provide access to the E-Patent Reference feature during its evaluation of the pilot.

### Comments

Comments concerning the E-Patent Reference feature should be in writing and directed to the Electronic Business Center (EBC) at the USPTO by electronic mail at [eReference@uspto.gov](mailto:eReference@uspto.gov) or by facsimile to (703) 308-2840. Comments will be posted and made available for public inspection. To ensure that comments are considered in the evaluation of the pilot project, comments should be submitted in writing by January 15, 2004.

Comments with respect to specific applications should be sent to the Technology Centers' customer service centers. Comments concerning digital certificates, customer numbers, and associating customer numbers with applications should be sent to the Electronic Business Center (EBC) at the USPTO by facsimile at (703) 308-2840 or by e-mail at [EBC@uspto.gov](mailto:EBC@uspto.gov).

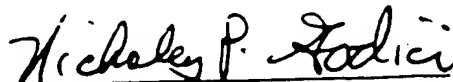
### Implementation after Pilot

After the pilot, its evaluation, and publication of a subsequent notice as indicated above, the Office expects to implement its plan to cease mailing paper copies of U.S. patent references cited during examination of non provisional applications on or after February 2, 2004; although copies of cited foreign patent documents, as well as non-patent literature, will still be mailed to the applicant until such time as substantially all applications have been scanned into IFW.

### For Further Information Contact

Technical information on the operation of the IFW system can be found on the USPTO website at <http://www.uspto.gov/web/patents/ifw/index.html>. Comments concerning the E-Patent Reference feature and questions concerning the operation of the PAIR system should be directed to the EBC at the USPTO at (866) 217-9197. The EBC may also be contacted by facsimile at (703) 308-2840 or by e-mail at [EBC@uspto.gov](mailto:EBC@uspto.gov).

Date. 12/1/03



Nicholas P. Godici  
Commissioner for Patents